REMARKS

STATUS OF THE CLAIMS

Claims 1-40 and 43-51 are pending as shown in the response filed on July 17, 2006.

PRIORITY

It was again asserted that claims 1-40 and 43-51 are not entitled to priority to any of 09/475,704; 60/114,495; and/or 60/152,195 on the grounds that these applications do not provide written support for SEQ ID NO:30-32. (Advisory Action, page 2).

For the reasons of record, Applicants again respectfully disagree with the assertion that the priority applications must set forth the particularly claimed sequences in order to describe these sequences.

REINSTATED REJECTIONS – CLAIM SCOPE

On page 2 of the Advisory, it was noted that the Examiner has "changed his opinion" regarding the scope of the claims and continues to assert that the claims are extremely broad and "do not exclude polypeptides having wild-type Pol activity." Advisory Action, page 2.

To reiterate, the claims are not required to exclude polypeptides having wild-type Pol activity. In order to fall within the scope of the claims, a polynucleotides must exhibit both 90% identity to the recited sequences at the nucleotide level and, in addition, that the nucleotide sequence encode an HIV Pol polypeptide that elicits a Pol-specific immune response. Not only is it extremely unlikely that a single amino acid mutation would destroy the recited function of generating a Pol-specific immune response, any polynucleotide that does not elicit a Pol-specific immune response does **not** fall within the scope of the claims.

When all structural and functional limitations are properly considered, it is clear that the claimed subject matter is more than adequately described and enabled by the as-filed specification.

35 U.S.C. § 112, 1ST PARAGRAPH, WRITTEN DESCRIPTION

Claims 1-40 and 43-47 remain rejected as allegedly not described by the specification as filed. (Advisory Action, pages 2-3). In particular, it was alleged that the written description requirement has not been met because:

(a) the term "an HIV Pol polypeptide that elicits a Pol-specific immune response" is allegedly not defined and that the Pol polypeptides lacking non-immunogenic enzymatic functions are not described; and

(b) the previous evidence of record (PowerPoint slides presented by PTO, PTO Examples regarding written description, Declaratory evidence, and issuance of related patents) does not show that applicant had possession of the claimed genus. *Id.*

(a) Definition of "HIV Pol polypeptide that elicits a Pol-specific immune response"

The Advisory Action stated that the as-filed specification does not "specifically discuss deleting enzymatic function, it only discusses modifying other regions of the protein (page 36) and in some instances inactivating RT and INT function (page 73)." *Id.*

Given that RT and INT are enzymes, the statement that the as-filed specification does not "specifically discuss deleting enzymatic function" is in error. Plainly, Applicants have shown that a Pol-specific immune response is generated by an immunogenic HIV Pol polypeptide lacking one or more other Pol functions (including enzymatic functions).

In addition to the fact that the specification clearly teaches that the polypeptide encoded by the claimed sequences elicits a Pol-specific immune response, Applicants believe that reading "immune response" out of the context with "HIV Pol-specific" renders the claim meaningless and fails to comport with the knowledge of one of skill in the art in the field of HIV and molecular biology.

In this regard, the Examiner dismissed evidence (WO 00/39302, Ref B93 of IDS filed December 18, 2002 and considered February 21, 2003) that it was also well known at the time of filing that an HIV Pol polypeptide would elicit an immune response specific for HIV Pol, even when the Pol polypeptide did not exhibit "other" Pol functions on the grounds that "the claims are broader in scope than a nucleic acid encoding an immunogenic HIV Pol that does not exhibit wild-type functions." Advisory Action, page 2.

The assertion that this reference is not germane because the pending claims encompass both Pol polypeptides with wild-type and non-wild-type functions is nonsensical. The claims are drawn to expression vectors having the recited homology at the nucleotide levels and which necessarily encode a polypeptide that elicits a Pol-specific immune response. WO 00/39302 directly addresses the claimed subject matter.

In addition, submitted herewith is a publication from the inventors' laboratory, again showing that polynucleotides as claimed encode proteins that exhibit Pol-specific immune responses. See, e.g., Tables 3 and 5 of Otten et al. (2006), Ref. C1 of IDS attached hereto. Therefore, in light of the art, as exemplified by the references discussed above, the term "HIV Pol polypeptide that elicits a Pol-specific immune response" cannot be construed to encompass polypeptides that do not induce a Pol-specific response (*e.g.*, polypeptides that induce general, non-Pol-specific immune responses).

The claimed sequences encode polypeptides that elicit specific (HIV Pol) immune responses and sequences that do not encode polypeptides that produce an HIV Pol-specific immune response are not encompassed by the pending claims. In other words, the genus encompassed by the claims is nowhere near as broad as that painted in the Final Office Action. When the claims are properly construed, it is plain that they are drawn to a genus of nucleotide sequences encompasses only those nucleotide sequences that encode a polypeptide that elicits a humoral and/or cellular immune response specific for an HIV Pol polypeptide.

(b) The Evidence of Record Establishes that Written Description is Satisfied in the Pending Case

The Advisory Action again dismissed the evidence of record, including recent Federal Circuit case law regarding written description, PTO presentations and PTO Guidelines, as irrelevant on the grounds that they do not demonstrate the expression cassettes as claimed encode proteins that are more immunogenic than native Pol proteins. Advisory Action, page 2.

Applicants incorporate all the previous arguments made in this regard and reiterate that, based on the particular facts in this case (including disclosure, common knowledge and evidence of record), the written description requirement has in fact been more than amply satisfied in the instant case.

It remains that case that the as-filed literally describes exemplary sequences encoding polypeptides as claimed in the as-filed specification. Furthermore, the as-filed specification teaches, in detail and with working examples, how to obtain additional polynucleotides with the recited structural and functional characteristics. Satisfaction of the written description requirement does not necessitate that each and every member of the claimed genus be set forth, let alone "tested" in order to show possession. Nor does the written description requirement necessitate a showing that the skilled artisan can predict *a priori* each and every nucleotide sequence falling within the scope of the claims. Even if it did, Applicants have met this inasmuch as the as-filed specification contains unambiguous **literal** description of the structure of any member of the claimed genus by reference to its sequence similarity to a reference sequence.

Furthermore, in addition to the ample evidence of record, submitted herewith is an additional article from the laboratory of the inventors' showing that the claimed genus (modified Pol-encoding sequences) are immunogenic in that they elicit a Pol-specific immune response. There is no requirement that the immunogenic response elicited be "improved" as compared to wild-type and the Examiner cannot read such limitations into the claims. All that is required is that the claimed expression cassettes include a nucleotide with the requisite 90% homology to the reference sequences and encode an HIV Pol polypeptide that elicits a Pol-specific immune response. The evidence of record clearly establishes that Applicants were in possession of such molecules at the time of filing and, accordingly, adequate written description is present.

Therefore, for the reasons of record and those set forth herein, the as-filed specification more than satisfies the written description requirement of 35 U.S.C. § 112, 1st paragraph.

35 U.S.C. § 112, 1ST PARAGRAPH, ENABLEMENT

Claims 1-40 and 43-47 were also again rejected under 35 U.S.C. § 112, 1st paragraph as allegedly not enabled by the as-filed specification. (Advisory Action, page 3).

As set forth in the seminal case of *In re Marzocchi,* 439 F.2d, 220, 223, 169 USPQ 367, 369 (CCPA 1971), a patent application is presumptively enabled when filed:

> [a]s a matter of Patent Office practice ... a specification .. must be taken as in compliance with the enablement requirement of the first paragraph of § 112

> unless there is reason to doubt the objective truth of the statements contained therein which must be relied on for enabling support.

Moreover,

> it is incumbent upon the Patent Office, whenever a rejection on [grounds of enablement] is made, to explain *why* it doubts the truth or accuracy of any statement in a supporting disclosure and to back up assertions of its own with acceptable evidence or reasoning which is inconsistent with the contested statement. Otherwise there would be no need for the applicant to go to the trouble and expense of supporting his presumptively accurate disclosure.

439 F.2d at 224, 169 USPQ at 369-370. Indeed, as pointed in the Patent Office's own Training Manual on Enablement (1993, citing *In re Wright,* 999 F.2d 1557, 1561-1562, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993), "the case law makes clear that properly reasoned and supported statements explaining any failure to comply with section 112 are a requirement to support a rejection."

In the Advisory Action, it was asserted that there is "no evidence of record teaching how to make and use a nucleic acid encoding Pol polypeptides with codons found in highly expressed human genes results in clear improved immunogenicity over native nucleotide sequences encoding HIV Pol." Advisory Action, page 3.

This assertion is irrelevant and erroneous to an enablement inquiry. As with written description, there is no requirement that Applicants show "improvement" (let alone clear improvement) over native Pol-encoding nucleotide sequences. The relevant question regarding enablement remains what the specification and state of the art at the time of filing teaches one of skill in the art in regard to eliciting Pol-specific immune responses. The fact that the claimed nucleotide sequences to encode polypeptides that elicit a Pol-specific immune response is fully supported by the evidence of record, including the publication submitted herewith. The Office has not provided sufficient evidence supporting non-enablement and, in the absence of necessary relevant evidence contradicting the teachings of the specification and state of the art, the rejection cannot be maintained.

Thus, for the reasons of record and above, the specification describes and enables the claimed subject matter. Reconsideration and withdrawal of the rejections under 35 U.S.C. § 112, first paragraph, are respectfully requested.

PROVISIONAL OBVIOUSNESS-TYPE DOUBLE PATENTING

Applicants request the provisional double patenting rejection over 10/190,435 be held in abeyance until indication as at allowable claims is received in one of the applications.

CONCLUSION

In view of the foregoing amendments, Applicants submit that the claims are now in condition for allowance and request early notification to that effect.

The Commissioner is hereby authorized to charge any fees under 37 C.F.R. §1.16, §1.17, and §1.21, which may be required by this paper, or to credit any overpayment, to Deposit Account No. 18-1648, referencing Atty. Docket No. 2302-1631.20.

Please direct all further written communications regarding this application to:

Helen Lee
NOVARTIS VACCINES AND DIAGNOSTICS, INC.
Intellectual Property - R440
P. O. Box 8097
Emeryville, CA 94662-8097
Telephone: (510) 923-2192
Facsimile: (510) 655-3542.

Respectfully submitted,

Date: October 8, 2007

By: _____

Dahna S. Pasternak
Attorney for Applicants
Registration No. 41,411

NOVARTIS VACCINES AND DIAGNOSTICS, INC.
Intellectual Property - R440
P. O. Box 8097
Emeryville, CA 94662-8097
Telephone: (510) 923-2192
Facsimile: (510) 655-3542